

SECTION 109 MEASUREMENT AND PAYMENT

109.01. MEASUREMENT OF QUANTITIES.

- (a) **General.** All work completed under the Contract will be measured by the Resident Engineer according to the United States standard measure or the modernized metric International System of Units (SI).

A station, when used as a definition or term of measurement, will be 100 linear feet (1 kilometer).

The methods of measurements and computations to be used in determination of quantities of material furnished and of work performed under the Contract will be those methods generally recognized as conforming to good engineering practice.

Unless otherwise specified, longitudinal measurements for area computations will be made horizontally, and no deductions will be made for individual fixtures having an area of 9 square feet (1.0 square meters) or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the Plans or as modified by the Resident Engineer.

Where the area unit for measurement and payment is on an acre (hectare) basis, the measurements will be taken on the slope of the ground to compute the actual surface area in acres (hectares) for payment.

Structures will be measured according to neat lines shown on the Plans or as altered to fit field conditions.

All items which are measured by the linear foot (meter), such as pipe culverts, guardrail, underdrains, etc., will be measured as specified under the Method of Measurement for the item in the Specifications, unless otherwise shown on the Plans.

The thickness of plates and galvanized sheet used in the manufacture of corrugated metal pipe, metal plate, pipe culvert and arches, and metal cribbing will be specified and measured in decimal fractions in inches (millimeters). The measurement of wire will be by Size Number in accordance with AASHTO M 32 unless otherwise specified.

The term "ton" will mean the short ton consisting of 2000 pounds, avoirdupois. The term "metric ton" will mean 1000 kilograms. All materials which are measured or proportioned by weight shall be weighed on accurate approved scales by competent, qualified personnel at locations designated by the Resident Engineer. If material is shipped by rail, the car weight may be accepted, provided that only the actual weight of material will be paid for. However, car weights will not be acceptable for material to be passed through mixing plants. Trucks used to haul material being paid for by weight shall be weighed empty daily at such times as the Resident Engineer directs, and each truck shall bear a plainly legible identification mark.

All scales for weighing truck loads of materials to be paid for by weight measurements shall be of adequate size and capacity to weigh the entire gross load at one weighing on a single set of scales.

Scales shall be inspected and certified at least every six (6) months or more often as the Resident Engineer may deem necessary to assure their continued accuracy. The Contractor shall have on hand not less than ten 50 pound (22.7 kilogram) weights for testing scales. Approved commercial scales may be used.

Instead of weighing truck loads of materials on single sets of scales measuring the gross load as provided above, the Contractor may use an approved automatic batch weight and printer system.

The approved automatic batch weight and printer system shall be electronically controlled and capable of determining the net batch weight of material being delivered to the transporting truck. Such weights shall be evidenced by a weigh ticket containing all the required identifying information for each load.

The printed batch weights may be used in lieu of truck scales in making this weight determination.

The automatic batch weight and printer system shall be subject to calibration, inspection, and certification requirements as provided above for scales.

Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable to the Resident Engineer, provided that the body is of such shape that the actual contents may be readily and accurately determined. All vehicles shall be loaded to at least their strike-off level or approved established capacity when materials are delivered to the Project.

The Resident Engineer may require leveling of the loads as deemed necessary to assure receiving at least the established capacity.

The capacity of all vehicles shall be established by the Resident Engineer and plainly marked on said vehicle and the capacity or marking shall not be changed without permission of the Resident Engineer.

When requested by the Contractor in writing, and approved by the Resident Engineer, material specified to be measured by the cubic yard or ton (cubic meter or metric ton) may be converted to the other measure as appropriate. Factors for conversion from weight measurement to volume measurement will be determined by the Resident Engineer and shall be agreed to by the Contractor before such method of measurement of the pay quantity is used.

Bituminous materials will be measured by the gallon (liter) or ton (metric ton).

Volumes will be measured at 60° Fahrenheit (15.6° Celsius) or will be corrected to the volume at 60° Fahrenheit (15.6° Celsius) using ASTM D 1250 for asphalts or ASTM D 633 for tars.

Net certified scale weights or weights based on certified volumes in the case of rail shipments will be used as a basis of measurement, subject to correction when bituminous material has been lost from the car or the distributor, wasted, or otherwise not incorporated in the work.

Wherever in the Plans or the Contract, or in the Proposal, it is provided that liquid asphalts be measured by the gallon (liter), and the liquid asphalt is delivered to the project with certified weight billing, the weight of the liquid asphalt used in the completed and accepted work shall be converted to gallons (liters) by the application of a conversion factor approved by the Department's Central Laboratory. Any portion of a load delivered to the work and not used shall be determined by

measurement or weighing, in the vicinity of the project, and making the necessary deduction to arrive at the weight or volume of liquid asphalt used in the work.

Liquid asphalt, when measured by weight and converted to gallons (liters), as provided herein, shall be paid for by the gallon (liter).

The Contractor shall provide all necessary means and assistance for measuring and calibrating distributors and tanks for determining the quantity of material in distributors and tanks at any time. The Resident Engineer may require that the distributor be calibrated before its use on the work and any other time deemed necessary. The Contractor shall furnish a calibrated gauge (strapping stick) for each distributor so that the volume can be determined at any level of the contents. The Contractor shall place the distributor on a level area for these measurements.

Portland cement will be measured by the pound (kilogram), ton (metric ton) or hundred weight [abbreviated "cwt"], as appropriate.

The term "lump sum" when used as an item of payment will mean complete payment for the work described in the Contract.

When a complete structure or structural unit (in effect, "lump sum" work) is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.

When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc., and these items are identified by gauge, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited Specifications, manufacturing tolerances established by the industries involved will be accepted.

- (b) **Plan Quantities.** When the contract specifies payment of an item or of a portion of an item on a plan quantity basis, the quantities for payment will be those shown on the Plans with deductions from or additions to such quantities resulting from authorized deviations from the Plans.

When disagreement develops between the Contractor and the Resident Engineer as to the accuracy of the plan quantities, either party shall, before any work is started which would affect the measurement, have the right to request in writing that the quantities involved be measured. If the plan quantity is found to be in error, acceptance and payment will be made in accordance with the corrected plan quantity.

109.02. SCOPE OF PAYMENT.

The Contractor shall accept the compensation, as herein provided in the Contract, in full payment for furnishing all materials, equipment, labor, tools and incidentals necessary to complete the work and for performing all work contemplated and embraced under the Contract; also for loss or damage arising from the nature of the work, or from the action of the elements, or from any unforeseen difficulties, except as provided in Subsection 104.14., which may be encountered during the prosecution of the work until the final acceptance by the Resident Engineer, and for all risks of every description connected with the prosecution of the work, for all expenses incurred in consequence of the suspension or discontinuance of the work as herein specified, and for any infringement of patent, trademark, or copyright; and for completing the work according to the Plans and the Contract. The payment of any estimate shall not relieve the Contractor of any obligation to make good any defective work or material.

109.03. PAYMENT FOR INCREASED OR DECREASED QUANTITIES.

Payment for changes of quantities are to be paid for as set forth in Subsection 104.04.

Increase in quantities covered in Subsection 104.04., regardless of magnitude will be paid for at the Contract unit price bid for each item of work involved.

No adjustment of payments to the Contractor will be made for increases or decreases in cost. Sales tax reimbursements will be available in accordance with the applicable rules and regulations of the Oklahoma Tax Commission.

109.04. DIFFERING SITE CONDITIONS, CHANGES & EXTRA WORK.

- (a) When notification has been made as provided in Subsection 104.06. and the Resident Engineer and the Contractor agree that differing site conditions exist, significant changes in the character of work will be required or extra work will be performed which was not included with the scope of the Contract, such changes, conditions, and work will be paid for using the following methods as appropriate:
 - 1. Contract unit prices.
 - 2. Unit prices agreed-upon in the order authorizing the work.
 - 3. Lump sum amount agreed upon in the order authorizing work.
- (b) When the Contractor and the Resident Engineer cannot agree as to a method for evaluation and compensation for differing site conditions, significant changes in the character of work, or for extra work, the Contractor shall submit a fully documented itemized claim as required by Section 105.18. listing of costs incurred by the Contractor in the completion of the disputed work. All cost listings for disputed work and documentation in support thereof shall be segregated from non-disputed work and shall be clearly attributable to the disputed work by date, stationing and type of work. Only the following cost items may be included in the Contractor's request for compensation.
 - 1. **LABOR.** The Contractor may submit the actual costs incurred by the Contractor for labor which is directly attributable to the disputed work. In the support of this cost the Contractor shall submit certified time sheets detailing the name of each laborer or supervisor, the classification, the date of the work, the daily hours, the total hours, the wage rates, and extensions thereof. An additional amount equal to twenty percent (20%) of the labor costs attributable to the disputed work may be added for Contractor's overhead and profit.
 - 2. **MATERIALS.** For materials approved by the Resident Engineer and used in performance of the disputed work, the Contractor may receive the actual cost of such materials including transportation costs paid by the Contractor. The materials shall be documented by means of itemized invoices as prepared by the materials supplier. An amount equal to fifteen percent (15%) of the costs incurred by the Contractor for materials and transportation costs attributable to this disputed work may be added for Contractor's overhead and profit.
 - 3. **EQUIPMENT.** For any machinery or special equipment (other than small tools) the use of which as been authorized by the Resident Engineer, the Contractor may be compensated at a rate equal to seventy percent (70%) of the hourly combined ownership and repair expense found in the Contractor's Equipment Costs Guide as published by K III Directory Corporation

on January 1st of the year in which the work was performed. Compensation will be only for those pieces of equipment necessary for completion of the disputed work and for the period of time during which such disputed work was actually in progress. In addition to equipment actually in use for the prosecution of disputed work, the Contractor may be compensated whenever equipment is ordered by the Resident Engineer to be held on the job on a standby basis at a rate equal to fourteen percent (14%) of the hourly combined ownership and repair expense as provided on the Costs Guide. In support of the Contractor's request for compensation for equipment, the Contractor shall submit a listing showing all equipment used in completion of the disputed work or held by direction of the Resident Engineer in the standby condition by type, manufacturer, date of manufacturer, daily hours, total hours, and extension thereof. An amount equal to fifteen percent (15%) with the total cost of equipment used in disputed work or held in standby condition may be added for overhead and profit.

4. **BONDS, INSURANCE TAXES AND BENEFITS.** For increase in bond costs in premiums for property damage and liability insurance, for workers' compensation insurance as well as unemployment insurance contributions, and social security taxes attributable to the disputed work the Contractor may be compensated in accordance with the following schedule:
- (a) **Bonds.** The Contractor may add a sum equal to one percent (1%) of the total of (1), (2), and (3) (less overhead and profits) above for additional costs for bonding requirements.
 - (b) **Insurance.** For property damage and liability, the Contractor may be compensated at a sum equal to eight percent (8%) of the actual labor costs (less overhead and profits) listed in items (1) above.
 - (c) **Workers' Compensation.** For additional costs for Workers' Compensation during the time when the disputed work was in progress, the Contractor may be reimbursed for costs incurred for each worker actually performing disputed work at the rate prescribed for such worker's job classification in the Scope of Basic Manual Classifications as published by the National Council on Compensation Insurance for the period in which the disputed work was performed.
 - (d) **Unemployment Insurance Contribution.** For the Contractor's unemployment insurance contribution during the period that disputed work was in progress, the Contractor may be compensated the sum equal to three and eight tenths percent (3.8%) of actual labor costs (less overhead and profit) listed in item (1) above.
 - (e) **Social Security Taxes.** For social security taxes for labor attributable to the disputed work, the Contractor may be compensated at a rate equal to seven and sixty-five hundredths percent (7.65%) of actual labor costs (less overhead and profit) listed in item (1) above.
 - (f) **Employee Fringe Benefits.** For employee fringe benefits incurred by the Contractor for labor during the period that the disputed work was in progress the contractor may be compensated at a rate equal to twenty percent (20%) of actual labor costs (less overhead and profit) listed in item (1) above.

5. **SUBCONTRACTED WORK.** When the disputed work is of a nature that it is normally performed by a subcontractor in the highway industry, and it is, in fact, sublet by the Contractor, the documentation as indicated for items (1) through (4) above will be furnished by the subcontractor and the Contractor may request additional compensation of an amount equal to five percent (5%) for overhead expense incurred by the Contractor.
6. **WORK OF A NON-HIGHWAY CONSTRUCTION NATURE.** When the disputed work has in fact been performed by a contractor or a subcontractor not in the highway industry and was performed by workers of a specialized trade or business, the Contractor may submit invoices for costs incurred for such services and may add for the Contractor's overhead an amount to be determined as follows:

<u>When the Dollar Amount of the Work Is</u>	<u>Add on for Overhead</u>
\$0.00 to \$2,000.00	15%
\$2,000.00 to \$5,000.00	\$300.00 + 10% over \$2,000.00
Over \$5,000.00	\$600.00+ 5% over \$5,000.00

7. **MISCELLANEOUS.** No additional allowance shall be made for other overhead and general expense costs of any kind and the cost of any item not specifically and expressly included in Subsection 109.04.b.

109.05. PAYMENT FOR CANCELED ITEMS.

Payment for canceled items are to be paid for as set forth in Subsection 104.04. and as provided below.

Acceptable materials ordered by the Contractor or delivered on the work subsequent to the award of the Contract and prior to the date of cancellation, alteration, or suspension of the work by order of the Resident Engineer will be paid for at the actual cost to the Contractor and shall thereupon become the property of the State. The Contractor shall submit immediately certified statements covering all money expended in preparation for work on any canceled item when such preparation has no value to the remaining items of the Contract for a proportionate amount based on the total Contract price over which such preparation would ordinarily be distributed when other items are included in such a preparation.

109.06. PROGRESS PAYMENTS.

The Resident Engineer will make written estimates of the materials complete in place and amount of acceptable work performed in accordance with the Contract during the current period of time since the preceding estimate and the value thereof calculated at the Contract unit prices.

Estimates will be made monthly except that whenever the value of the work completed in one-half month amounts to fifteen thousand dollars (\$15,000) or more, estimates may be made semi-monthly. No estimates except final estimates will be made for a sum less than five hundred dollars (\$500). The estimates will be approximate only and all progressive estimates and payments will be subject to correction in any progressive estimate rendered following discovery of an error.

In computing progressive estimates, concrete piles will be considered fifty percent completed as soon as they are cast satisfactorily. This item will be paid on the progressive estimate at fifty percent of the contract unit price or prices, based on the total linear measurement cast.

Should any defective work or material be discovered, or should a reasonable doubt arise as to the integrity of any part of the work completed prior to the final acceptance and payment, there will be deducted from the first progressive estimate rendered after the discovery of such defect, an amount equal in value to the suspect or defective work, and this amount will not be included in a subsequent progressive estimate until the defects have been remedied or the cause for doubt removed.

109.07. PAYMENT FOR MATERIAL ON HAND.

Payment to the Contractor may be made for materials conforming to the Plans and the Contract which are stockpiled at the project site or other approved or designated locations, or at a plant site required for Contractor's operations as approved by the Department. This payment will be made in accordance with the Department's procedure on the following basis:

- (a) Payment for materials which alone or when blended with other materials conform to the Plans and the Contract and which are purchased and delivered to a location as covered above will be made on the basis of one hundred (100) percent of the value of the materials not to exceed ninety (90) percent of the Contract unit price. The value of the materials will be established from acceptable invoices prepared by the supplier, furnished by the Contractor, and kept on file by the Resident Engineer.
- (b) Payment for materials which alone or when blended with other materials conform to the Plans and the Contract, and which are produced by the Contractor's own operations will be made on the basis of one hundred (100) percent of the Contractor's cost of production and stockpiling, not to exceed ninety (90) percent of the Contract unit price. The Contractor's cost of production and stockpiling shall be evidenced by a detailed cost break down approved by the Resident Engineer.
- (c) The quantity of each particular stockpiled material to be considered will be limited to that required for the Project and the payment shall not exceed their pro rata part of the Contract item or items in which such materials are to be incorporated in conformity to the Contract.
- (d) Payment for stockpiled materials which are blended with other materials shall be limited to bulky materials which are durable in nature. Payment will be made for such materials when the total value exceeds ten thousand dollars (\$10,000.00).
- (e) Payment for material on hand will be withheld until issuance of Notice to Proceed, unless otherwise authorized.
- (f) Payment for individual items which are Contract specific shall be limited to items of not less than five thousand dollars (\$5,000) gross value.

109.08. ACCEPTANCE AND FINAL PAYMENT.

When the Project has been accepted under Subsection 105.17., the Resident Engineer will prepare the final estimate of work performed. If the Contractor approves the final estimate or files no claim or objection to the quantities therein within thirty (30) calendar days of receiving the final estimate, the

Department will process the estimate for final payment. With approval of the final estimate by the Contractor, payment will be made for the entire sum found to be due after deducting all previous payments and all amounts to be deducted under the provisions of the Contract.

If the Contractor files a claim under the Contract requirements, the Department must be timely notified of the conditions which the Contractor believes may warrant such claim as provided in Subsection 104.06. and the claim, if subsequently filed, must be in accordance with Subsection 105.18. No other procedures shall be authorized. Upon review or final adjudication of the claim, any additional payment determined to be due the Contractor will be placed on a supplemental estimate and processed for payment.

All prior progress payments will be subject to correction in the final estimate and payment.

Acceptance shall be final and conclusive except as otherwise provided in the Contract or as regards latent defects or frauds, or such gross mistakes as may amount to fraud, or as regards to the Department's rights under any warranty or guaranty or bond.

109.10. COMPENSATION FOR PROJECT DELAYS.

Strict compliance with the provisions of this Subsection will be an essential condition precedent for the Contractor to receive compensation for delays.

- (a) Only the additional costs associated with the following items will be recoverable by the Contractor as compensation for delays:
 - 1. Direct labor costs as allowed in Section 109.04.b.1. and 109.04.b.4.(c) through (f);
 - 2. Costs for materials as allowed in Section 109.04.b.2. Materials;
 - 3. Equipment costs for equipment authorized by the Engineer to be held in a standby condition during the period of the delay at a rate equal to fourteen percent (14%) of the hourly combined ownership and repair expense found in the current edition of the Contractor's Equipment Cost Guide as published by the K III Directory Corporation for January 1 of the year in which the work was performed;
 - 4. Costs of extended job-site overhead;
 - 5. An additional 10 percent of the total of items 1, 2, 3, and 4 for extended home office overhead and to compensate for other expenses for which no specific allowance is provided.
- (b) The parties agree that, in any adjustment for delay costs, the Department will have no liability for the following items of damages or expense.
 - 1. Profits in excess of those provided herein;
 - 2. Loss of profit;
 - 3. Labor inefficiencies based on published manuals of productivity, measurement and inefficiencies;
 - 4. Home office overhead in excess of that provided herein;

5. Consequential damages, including but not limited to loss of bonding capacity, loss of bidding opportunities and insolvency;
6. Indirect costs or expenses of any nature;
7. Attorney's fees, claims preparation expenses, or costs of litigation.

109.11. PAYMENTS TO SUBCONTRACTORS.

Contractors shall pay subcontractors for work satisfactorily performed by the subcontractor within thirty (30) days of receipt from the Department of payment for subcontracted work. Retainage may be held by the Contractor during the pendency of subcontractor's work in accordance with the terms of the subcontract but must be released by the Contractor within thirty (30) days of satisfactory completion of the subcontractor's work and payment for the completed work by the Department. Acceptance of the subcontracted work by the Resident Engineer shall constitute satisfactory completion of subcontracted work. Delay or postponement of payment to subcontractor for work or release of retainage may be imposed by the Contractor for failure by the subcontractor to pay for labor, supplies or materials or to provide required documentation or for other good cause shown but delay or postponement of payment may only be effected after written approval by the Resident Engineer. Exceptions will be approved only as to individual subcontractors on a case by case basis for good cause shown. Failure to promptly pay subcontractors or to release subcontractor's retainage may result in disqualification of a Contractor as non-responsible or refusal by the Department to issue a Proposal Form to a Contractor for future Projects as provided in Subsection 102.04. All subcontracting agreements made by the Contractor as provided in Subsection 108.01. shall include the currently adopted payment to subcontractors provisions as incorporated in the Contract. All disputes between Contractors and subcontractors relating to payment for completed work or retainage shall be referred to a dispute resolution service, such as American Arbitration Association (AAA) for resolution through binding arbitration.